

Trip Report
Observation and Evaluation of
Current Wildland Fire Situation
Peten, Guatemala

April 21-26, 2005



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EXECUTIVE SUMMARY

The United States Department of the Interior (DOI), International Technical Assistance Program (ITAP) in conjunction with the United States Agency for International Development/Guatemala (USAID/Guatemala) requested an evaluation of the current wildland fire situation that has been ongoing since February, 2005. Reports and land sat photos have shown numerous fires occurring within the Mayan Biosphere Reserve (MBR) and National Parks in the Peten Region of Northern Guatemala. Walter Herzog, Fire Management Officer for Bureau of Land Management (former DOI Technical trainer in Peten, Guatemala: Feb, 2005 and Peru; 1999, 2000) completed a work detail to observe the wildland fire situation and evaluate effectiveness of fire fighting resources.

Mr. Herzog worked with Consejo Nacional de Areas Protegidas (CONAP, the Guatemalan Park Service), Sistema Nacional Para la Prevencion y Control de Incendios Forestales (SIPECIF, the Guatemalan National Interagency Fire Center), and other agencies. Two days were spent in the field looking at ongoing fire fighting operations and two days were spent talking with Guatemalan fire managers, fire fighters, and other natural resource managers to assess their opinions of the fire situation. At the end of the trip, Mr. Herzog also met with Eduardo Gonzalez, Executive Secretary to the Guatemalan President, Ana Luisa Nogura, Executive Secretary for CONAP, and Anne Dix and Teresa Robles of USAID to discuss possible solutions to the ongoing problem.

Since February, 2005 there have been well over one-thousand fires within the 2.1 million hectare Mayan Biosphere Reserve. Approximately 60% of the fires have occurred within the multiple use and bufferzone areas of the reserve. The other 40% have occurred within protected national parks and biological reserves (mainly Laguna del Tigre NP, Sierra del Lacandon NP, Laguna del Tigre Biological reserve). All fires within protected national parks and biological reserves are trespass fires. All fires are human-caused by either single family farmers or farmers working for people building large-scale farms. Fire is being used as a tool to settle and clear land for agricultural (corn, and/or cattle) and to build homes. The existing Guatemalan fire fighting organization is operating fairly well on a small scale but is not effective to put out the number and size of fires. It is recommended that a reliable communication system be installed to improve operational effectiveness and safety. However, there seems to be no effective law enforcement system in place to stop illegal trespass and burning. Parque Nacional Laguna del Tigre is nearly 100% affected by land trespass invasions and fire and Parque Nacional Lacandon is approximately 60% affected.

The root cause of the fire problem is not people starting fires but land trespass and settlement. If land trespass could be stopped (i.e. farmers cutting trails and trees to prepare areas for burning during the dry season), you would nearly eliminate the fire problem within government protected park lands. Areas that have been already invaded will be difficult to control. It is imperative that land management agencies redraw the boundaries of remaining Mayan Biosphere Reserve protected areas and begin protecting them year round. If not, at least 80% of national parks and biological reserves within the Mayan Biosphere Reserve will consist of small villages, cattle farms, and cornfields within five years.

WORK DETAIL ACTIVITIES

April 21: Traveled from Redding, CA to Guatemala City, Guatemala

Observation:

While flying at night I observed over 30 fires in Northern Guatemala from one side of the airplane, many with over one mile long flaming fronts. Air quality in Guatemala City was smoky.

April 22: Traveled from Guatemala City to Santa Elena/Flores, Peten, Guatemala

Activity:

Met with Luis Romero and Venicio Montero from CONAP. They welcomed me and drove me to CONRED (Emergency Command) office where Julio Pineda, Fire Management Officer for Peten CONAP was working with Hector Monroy, Fundacion Defensores de la Naturaleza (Sub Director of Parque Nacional Sierra de Lacandon) to get a fire crew transported to a remote road less area in the park where fires had been reported.

Observations:

The CONRED office was under construction. It did not have telephones or computers. People, instead, relied on cell phones. The CONRED office had some maps showing where fires were, some dry erase boards with status of reported fires. The office had water, food, and tool rations for fire crews. It was functioning more or less like a cache and mobilization/dispatch center. People from different agencies were assigned to job functions such as operations, logistics, and administration.

Activity:

Mr. Herzog participated in a 160-mile round trip military helicopter flight from Flores to Parque Nacional Lacandon. The flight mission was to transport food supplies and a fire crew from a CO-OP village Union Maya Itza to a non-CO-OP village Nueva Jerusalem II and road less section of the park where several fires were burning. This mission flew over private land and both bufferzone and national park (protected core zone) lands within the Mayan Biosphere Reserve.

Observations:

The military flight gave an excellent overview of the fire situation, flying over hundreds of old and currently burning fires. Each fire varies from a few acres to a over one-hundred acres. All fires were agricultural burns lit by farmers to prepare land for corn planting, burn up previously cut trees for future farming, or for improving grass forage for cattle grazing. Many of the fires had burned into adjoining forest fragments and had killed additional trees in those fragments. Approximately 60% of the fires were on private and bufferzone lands. The other 40% were within the Parque Nacional Lacandon. One could clearly see where the park boundary began and where the bufferzone ended.



Illegal Trespass Fire at Parque Nacional Lacondon Trees cut and allowed to dry before burning. Fire areas will be used to plant corn once rainy season begins.



Village Nueva Jerusalem inside Parque Nacional Lacondon Fire Management Officer Julio Pineda dropping off food and gear for fire fighters to work on fires near this village.

The operation to transport the fire crew and supplies went smoothly. The only major issue Mr. Herzog observed was a lack of radio communication between the military helicopter, CONAP, and the fire crews. Once the crew was inserted they would have no way to communicate (except by walking to nearest village with phone) with CONAP or any other agency.

Mr. Herzog's impression was that the effort to insert firefighters inside the park's roadless area would not really help put out the fires. There were too many fires and they were being lit by people living in nearby villages. Some villages were CO-OP villages that existed prior to the park creation and other villages were new roadless 'trespass' villages further within park boundaries. The biggest benefit Mr. Herzog could see of the firefighter's effort was their presence showing the local people that somebody did not want fires on government protected park lands.

Activity:

Mr. Herzog met with Julio Pineda and Hector Monroy to further discuss the current fire situation and ideas on how to resolve the problem.

Observations:

Interagency agreements between agencies (i.e. CONAP, Guatemalan military, SIPECEF) are occurring but sometimes agreements are easily broken or priorities change so they may not be completely dependable. An example was presented in the case of utilizing military helicopters. They weren't as readily available as needed. The use of military helicopters can be a very effective tool both for fire fighting and other law enforcement, patrol, and land management operations. We talked about the need to improve the use of this resource.

Both land managers agreed that the root problem of the fires is land trespass. Ideas on how to reduce this problem were discussed. See recommendations section.

April 23: Peten, Guatemala

Activity:

Mr. Herzog met Julio Pineda in the morning and it was decided to send Mr. Herzog with a contract fire crew that was going to work on a fire that had been reported in the Biological Reserve San Miguel la Palotada El Zotz.

Observations:

This team drove with a contracted fire crew to a fire approximately five miles inside the reserve. The ten-acre fire was mainly out when we got there. A small farmers hut had been built along the road and the fire had been burned around this hut (see picture). The fire cause seemed to have been an effort by someone to burn off the vegetation to create an area for future farming. The area had been burned at least once before (old burned snags were witnessed nearby). Fire behavior consists of low to moderate intensity ground fires spreading along surface fuels such as grasses or leaf litter. Areas that have cured and dried fuels such as recently fallen trees will burn hotter. Nearly all fires go out during night time humidity recovery. Fires do not spread too far within these mature forest.

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Wildland Fire within Biological Reserve El Zotz. Fire Crew arrives at fire area. Farmers hut in picture had been built for quite a while. No effort was made to contact people responsible for building the hut or starting fire.



Guatemaln Contract Fire Crew. This crew patrolled and mopped-up the roadside fire at El Zotz.

The fire crew walked around the fire to patrol and basically mop-up a few smoldering logs within the fire. We followed an old machete cut path which nearly followed the fires edge. It seemed that the fire had been started along this path. The fire crew used machetes and portable back pack pumps. Essentially the fire was out and had very little chance for additional fire spread.

This fire gave Mr. Herzog a good perspective of how the Guatemalan fire organizations can mobilize a fire crew and work on a fire. The response was slow since it looked like the fire had started 2 - 4 days earlier. The fire clearly had been started by land trespass. There were some indigenous families that lived within the biological reserve but this fire was not near those families and was clearly a new trespass. The driver carried a radio but Mr. Herzog did not believe it could have worked or been able to transmit from our remote location.

April 24: Peten, Guatemala

Activity:

During the day, most fire operations consisted of logistical fire support of crews working on fires. Mr. Herzog stayed in Flores, gathered notes and worked on his report.

April 25: Peten, Guatemala, Traveled Flores to Guatemala City

Activity:

Mr. Herzog met with Julio Pineda at the CONRED office. They set up a close-out meeting with Luis Romero and Venicio Montero from CONAP (which later got cancelled). Mr. Herzog met with Roan McNab, Project Manager and Victor Hugo, GIS Specialist from Wildlife Conservation Society.

Observations:

Mr. McNab is actively involved with park conservation and is managing fire crews to suppress fires near the eastern portions of Parque Nacional Laguna del Tigre. Mr. Hugo is utilizing GIS and Land Sat images to monitor the wildland fire situation. They have also installed portable weather stations, donated by DOI in 2004, to improve methods of predicting when most damaging fire conditions will occur. Mr. McNab and Mr. Hugo reconfirmed the idea that the root cause of the fire problem is land trespass. They mentioned that recently paved roads such as the one going to the Town of Carmelita end up being access points for land trespass onto government protected park lands.

While flying at night Mr. Herzog observed nearly 100 fires from one side of the airplane, many with over one mile long flaming fronts.

April 26: Guatemala City, Traveled from Guatemala City to Redding, CA

Activity:

Mr. Herzog met with Eduardo Gonzalez, Executive Secretary to the Guatemalan President, Ana Luisa Nogura, Executive Secretary for CONAP, and Anne Dix and Teresa Robles of USAID to discuss possible solutions to the ongoing problem.

Observations:

Overall, the meeting went real well. Mr. Gonzalez has been instrumental in ensuring development of the new national fire management organization SIPICEF and funding organizations such as CONAP for fire management operations. Mr. Herzog saw some of the results of this funding at work in Peten. All parties discussed the importance of accurately reporting the significant number of wildland fires that have occurred and the potential for improving park and resource management radio communications. They also talked about the importance of focusing on land trespass issues to protect government managed lands.

One of the strategic objectives of USAID's economic assistance program in Guatemala is to improve natural resource management and conservation of biodiversity. It is hoped that USAID will continue to work with the national and local Guatemalan government to ensure that this objective is achieved.

RECOMMENDATIONS

FIRE MANAGEMENT:

Overall, the Guatemalan fire management organization is functioning on a small scale. They have necessary equipment, staff, organization, and training to mobilize, respond and control a fire in a fairly safe manner. The following recommendations would help improve effectiveness of fire management organization and operations. See park management recommendations section on how to actually slow or stop the fire problem:

1. Establish interagency radio communication system

A reliable radio communications system would greatly benefit fire management as well as other resource management and government operations. Mr. Herzog recommends coordinating efforts with each agency to purchase same brand radios, install compatible communication towers, and establish frequencies for each agency. Radio communications will:

- Provide a more rapid response to incidents such as wildland fire or law enforcement.
- Improve interagency cooperation and coordination.
- Improve efficiency of operations.

2. Improve Accuracy of Fire Reporting

Guatemalan news media were reporting only a few fires each day when there were literally hundreds! It is important to more accurately portray the wildland fire situation for several reasons.

- Hundreds of fires draws more attention to the reality of the situation and elevates the importance of the news event.
- Larger fire number statistics are more serious and will improve justification for wildland fire suppression funding.
- An effort should be made to figure out the number of acres burned in each park. I estimate that over 500,000-acres have burned this year within biosphere reserve park lands.

3. Utilize helicopters

Helicopters are a very effective tool for fire management and other resource management operations.

- Provide transportation of supplies and firefighters to roadless areas.
- Be utilized for water bucket drops on fires.
- Assist with patrol of park lands.

4. Improve interagency agreements

Interagency cooperation in the form of sharing resources to work on fire incidents is a vital component to a successful program. Apparently some interagency agreements are in place for each agency to share and reimburse resources. However, the agreements should be revisited each year and improved upon.

5. Wear uniforms and appropriate safety clothing

Mr. Herzog did not see many firefighters or fire managers wearing uniforms or appropriate fire clothing. Wearing uniforms improves image of agency and help improve effectiveness of operations. Uniformed

employees command more respect and help improve self image. Nomex and cotton clothes (not nylons or polyester) are safer and should be worn by all fire fighters.

PARK MANAGEMENT:

Land settlement is occurring throughout the Mayan Biosphere Reserve. This settlement is occurring on government protected park lands as well as within the multiple use and buffer zone areas. Current military and/or park management law enforcement is not working to stop people from land trespass within government protected lands. On previous visits to Parque Nacional Laguna del Tigre, deer hunting and land trespass were observed occurring right next to a park guard station. The park guards did not have the support to stop the land invasion. Either single-family farmers or people paid by upper class land settlers are entering park lands year round and cutting out their new ‘farm’ boundaries. In some areas, they log trees first while in other areas, they just cut the trees down so they will be dry enough to burn up during the dry season.

At this time, the Guatemalan government has a choice on whether to protect the remaining park lands. However, there may not be that same choice in five to seven years as most of the remaining parks will be severely impacted by farming and land settlement. Parque Nacional Tikal seems to be the only national park in Peten that may have adequate infrastructure and protection from land trespass. The following are recommendations on dealing with problem.

1. Protect remaining protected lands

Decide where the true park boundaries will be and provide effective protection from trespass.

As mentioned earlier in the report, nearly all of Parque Nacional Laguna del Tigre has been impacted and 60% of Parque Nacional Lacondon is now impacted. Even though some of these park lands can recover from farming and logging, it will be more difficult to remove families, homes, and small towns that are being built in these park lands. Park boundaries need to be redrawn on unsettled lands to clearly define where the protected lands will be. Fences and signs should be erected completely around the park and patrol should occur year round. Use Parque Nacional Tikal as an example.

2. Consider economic incentives for park management

Consider agreements with companies large enough and powerful enough to help protect these park lands in exchange for permission to manage other government lands for multiple use.

Multiple use areas could have taxes imposed on wood products and this money could be returned to the local communities (similar to the National Forest system in the U.S.). This may help provide an incentive to support ‘legal’ multiple use operations on government protected lands.

Develop park infrastructure to include entrance stations (with park fees), research station facilities to support international or university level research and support.



Plot ready to be burned within Laguna del Tigre National Park. Slash and burn land invasion is a common problem in Peten. Due to lack of park protection, and uncontrolled multiple use practices, these areas will become agricultural plots and cattle farms leading to further fragmentation of Guatemala's rain forest within Laguna del Tigre National Park. Photo taken from January, 2004 DOI trip.

ACKNOWLEDGEMENTS

Several personnel assisted Mr. Herzog during his visit which occurred over a weekend on very short notice. Mr. Herzog is especially grateful to Julio Pineda, Fire Management Officer for CONAP Peten. He was instrumental in ensuring that Mr. Herzog was able to participate in fire operations to gather meaningful information. He also was a big help in providing transportation. Hector Monroy from Fundacion Defensores de la Naturaleza, Roan McNab, Project Manager and Victor Hugo, GIS Specialist from Wildlife Conservation Society all took time to explain current fire and park management issues in Peten. Anne Dix, US AID Guatemala ensured that Mr. Herzog was getting support during his visit and helped set up an important meeting to discuss the current issues.

